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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/829,991 | 04/11/2001 | Hironori Kikkawa | Q63815 | 9940 |

7590

12/26/2002

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WASHINGTON, DC 20037-3213

EXAMINER

DUONG, THOI V

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2871

DATE MAILED: 12/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/829,991

Applicant(s)

KIKKAWA, HIRONORI

Examiner

Thoi V Duong

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/207,207.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. This office action is in response to the Amendment, Paper No. 8, filed October 07, 2002.

Accordingly, claims 10, 11, 16 and 18 were amended. Currently, claims 9-23 are pending in this application.

2. Applicant's arguments with respect to claims 9-23 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 9-11 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Kim et al. (USPN 5,907,379).

As shown in Figs. 4-6, Kim discloses an LCD device 45 having a common electrode comprising vertical stripes 21, 22, 23; a plurality of scanning lines 10; a gate insulating film 30; a plurality of signal lines 40; a plurality of pixel electrodes comprising horizontal stripes 43, 44 and vertical stripes 45, 46 formed parallel to said common electrode vertical stripes; and a plurality of pixel areas formed on a first substrate 1, wherein

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a black matrix 3 formed of chrome (col. 5, lines 23-24) is patterned on a second substrate 2 and liquid crystal is inherently disposed between said first substrate and said second substrate.

Kim also discloses that the black matrix covers an area other than said pixel area and said common electrode electrically shields said pixel area from a voltage of said black matrix (col. 6, lines 16-19).

Kim finally discloses that the common electrode and the scanning electrode are formed of chrome (col. 4, lines 3-6).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 12-16 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (USPN 5,907,379) in view of Kondo et al. (USPN 6,198,520 B1).

Kim discloses a method of fabricating a LCD device that is basically the same as that recited in claims 12-16 and 19-22 except for a process of fabricating color filters. As shown in Fig. 11, Kondo discloses a LCD device comprising a common electrode 2, a pixel electrode 3, a color filter 5 formed on a second substrate 1', and an overcoat layer 7 formed on said color filter, wherein said color filter is fabricated using plurality of photolithographic steps which comprise dispersing RGB pigments in a photosensitive

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polymer 16 (col. 9, lines 6-30) and said overcoat layer substantially eliminates impurity ion migration into said liquid crystal, flattens a surface of said second substrate and controls a thickness of said liquid crystal (col. 13, lines 5-7). As shown in Figs. 3 and 4, Kondo further discloses that the pixel electrode and the common electrode generate an electrical field 13 having a main component extending parallel to said first substrate and said second substrate and perpendicular to said pixel electrode and said common electrode in said pixel areas (col. 4, lines 33-65). Furthermore, the device comprises a plurality of polarizing plates 9, 9' positioned on a first substrate 1 and said second substrate 1' respectively, and orientation layers 8, 8' formed between a surface of each of said first and second substrates and liquid crystal, wherein a rubbing process is used for forming the orientation layers (col. 13, lines 7-11), and a polarization axis of the polarization plate 9 is parallel to the rubbing direction and intersects the polarization axis of the polarization plate 9' at a right angle (col. 13, lines 28-34). Finally, polymer beads are formed in spherical shapes having a diameter substantially equal to a gap between said first substrate and said second substrate (col. 13, lines 20-25). As well-known in the art, a step for bonding said first substrate to said second substrate is followed after the liquid crystal is disposed between said first substrate and said second substrate.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LCD of Kim with the teaching of Kondo by forming color filters using photolithography to improve a color purity for the display.

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7. Claims 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (USPN 5,907,379) in view of Ohta et al. (USPN 6,064,460) and Yamazaki et al. (USPN 5,892,562).

Kim discloses a LCD device that is basically the same as that recited in claim 18 except for forming a N+ type amorphous layer and a gate insulator film of silicon oxide. As shown in Figs. 7 and 8, Ohta discloses a LCD device comprising a gate insulator film GI formed on a scanning line GT and a common electrode CT4, and an amorphous silicon layer AS formed on the gate insulating film and a N+ type amorphous silicon layer dO formed on the amorphous silicon layer (col. 18, lines 15-21). However, the gate insulating film is not formed of silicon oxide. As shown in Fig. 5, Yamazaki also discloses a similar LCD device comprising a gate insulating film 405 formed of silicon oxide to cover a scanning electrode 403 and a common electrode 404. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LCD device of Kim with the teachings of Ohta and Yamazaki by forming a N+ type amorphous layer for ohmic contact and a gate insulating film of silicon oxide to prevent impurities from diffusing to the active portion as well as to relax stress between the lower glass substrate and the active portion of the display.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (703) 308-

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
3171. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (703) 305-3492.

Thoi Duong



12/18/2002



ROBERT H. KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2000